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10/621,119

07/16/2003

Arthur E. Quaid

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EXAMINER

CHAO, ELMER M

ART UNIT

PAPER NUMBER

3737

MAIL DATE

DELIVERY MODE

09/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/621,119

Applicant(s)

QUAID ET AL.

Examiner

Elmer Chao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9/14/2006 & 10/02/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgement is made of the amendment filed 10/2/2006.

Response to Arguments

2. Applicant's arguments with respect to claims 1-73 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-5, 9-14, 17-20, 32-35, 40-45, 48, 51, 66, 67, 70, and 73** are rejected under 35 U.S.C. 102(e) as being anticipated by Cosman (U.S. 6,405,072 B1).

Regarding **claims 1-5, 9-14, and 17-20**, Cosman teaches a method for use of a computer-assisted surgery system during a medical procedure, comprising: receiving information on an anatomical target region of a patient (col. 7, lines 1-3); tracking the position of a surgical tool as the tool is moved by a surgeon in performing the medical procedure (col. 7, lines 12-14); determining a scalar distance between a current position of said tool and the anatomical target region (col. 7, lines 3-4); and providing to the user

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of the surgical tool a visual indication of said scalar distance (Fig. 9b; col. 17, lines 21-32).

Regarding **claims 32-35, 40-45, 48, 51, 66, 67, 70, and 73**, the system taught by Cosman is fully capable of performing all the functional limitations recited in the claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 6, 7, 15, 16, 36-38, 46, and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman in view of Taylor et al. (U.S. 5,950,629).

Regarding **claims 15 and 46**, Cosman teaches the limitations as discussed above but fail to explicitly teach providing tactile feedback. However, in the field of positioning surgical instruments, Taylor et al. teach the step of using tactile feedback while positioning a surgical instrument (col. 8, lines 29-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include using tactile feedback in order to assist the surgeon in positioning the surgical instrument (col. 8, lines 30-31).

Regarding **claims 16 and 47**, vibration is a type of tactile feedback and would be obvious to one of ordinary skill in the art to include providing a vibration as an indicator

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in order to assist the surgeon in position the surgical instrument (Taylor et al., col. 8, lines 30-31).

Regarding **claims 6, 7, and 36-38**, Cosman teaches a display unit for indicating positional information (Fig. 7, Item 39). Cosman and Taylor et al. teach the limitations as discussed above but fail to explicitly teach the location of the display. However, providing the display integrated with the linac system or a haptics/tactile device is well known to those skilled in the art. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include integrating the display with a haptic device or the linac system in order for the operator to easily watch the updated distance while controlling the tool. Furthermore, such a modification would be considered a step of making integral (see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

7. **Claims 8 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman in view of Taylor et al., further in view of Sumanaweera et al. (U.S. 6,443,894 B1). Cosman and Taylor et al. teach the limitations as discussed above but fail to explicitly teach using color as a visual indicator. However, in the field of medical imaging, Sumanaweera et al. teach using color as a visual indicator (col. 13, lines 48-52). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use color as a function of distance as the visual indicator in order to alert the user of the distance between the tool and the target (for motivation see (col. 13, lines 50-52, "color is assigned for different distances").

8. **Claims 21, 22, 25-31, 49, 50, 52-54, 57-64, 68, 71, and 72** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman in view of Wodicka et al. (U.S. 5,445,144). Cosman teaches the limitations as discussed above but fails to explicitly teach an audio alert based on distance. However, in the field of medical positioning, Wodicka et al. teach using audio alerts based on distance (col. 14, lines 42-45). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use an audio alert in order to alert the user of a distance or position status of the tool (for motivation see col. 14, lines 42-45).

9. **Claims 23, 24, 55, 56, 65, and 69** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman in view of Wodicka et al., further in view of Taylor et al. Cosman and Wodicka et al. teach the limitations as discussed above but fail to explicitly teach providing tactile feedback. However, in the field of positioning surgical instruments, Taylor et al. teach the step of using tactile feedback while positioning a surgical instrument (col. 8, lines 29-30). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include using tactile feedback in order to assist the surgeon in positioning the surgical instrument (col. 8, lines 30-31).

Cosman and Wodicka et al. teach the limitations as discussed above but fail to explicitly teach the positioning of the audio alert system. However, providing the alert system as integrated with the linac system or a haptics/tactile device is well known to

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those skilled in the art. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include integrating the display with a haptic device or the linac system in order for the operator to easily hear the updated distance while controlling the tool. Furthermore, such a modification would be considered a step of making integral (see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmer Chao whose telephone number is (571)272-0674. The examiner can normally be reached on 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EC
8/23/2007


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